GE
Lighting Solutions

Installation Guide

24 Volt

GE Line Fit Light-LED (LFL-LED) Fluorescent Box Sign Retrofit

LED Lighting System

(GEF12T12DHOLED, GEF12T12SGNHOLED, GEF12T12CWHOLED)*

* key: D = Daylight (6500K), SGN = Sign White (5400K), CW = Cool White (4100K)

BEFORE YOU BEGIN

Read these instructions completely and carefully.

⚠ WARNING/AVERTISSEMENT

RISK OF ELECTRIC SHOCK
- Turn power off before inspection, installation or removal.
- Properly ground Tetra® power supply enclosure.

RISK OF FIRE
- Use only UL certified wire for input/output connections. Minimum size 18 AWG (0.82mm^2).
- Follow all NEC and local codes.

RISQUES DE DÉCHARGES ÉLECTRIQUES
- Coupez l'alimentation avant l'inspection, l'installation ou le déplacement.
- Assurez-vous de correctement mettre à terre l'alimentation électrique Tetra®.

RISQUES D'INCENDIE
- N'utilisez que des fils approuvés par UL pour les entrées/sorties de connexion. Taille minimum 18 AWG (0.82mm^2).
- Respectez tous les codes NEC et codes locaux.

⚠ CAUTION/ATTENTION

RISK OF INJURY
- While performing installations described, gloves, safety glasses or goggles should be worn.

RISQUE DE BLESSURE
- Lors de l'exécution des installations décrites, des gants, des lunettes de sécurité ou des lunettes de protection doivent être portées.

Save These Instructions

Use only in the manner intended by the manufacturer.
If you have any questions, contact the manufacturer.

Prepare Electrical Wiring

Electrical Requirements
- Limited to use in dry and damp locations.
- The grounding and bonding of the LED Driver shall be done in accordance with National Electric Code (NEC) Article 600.
- Follow all National Electric Codes (NEC) and local codes.
- These products are only suitable for connection to a circuit from a Class 2 power source. These products have not been evaluated for use when connected to a power source that does not comply with Class 2 voltage and energy limited supplies.

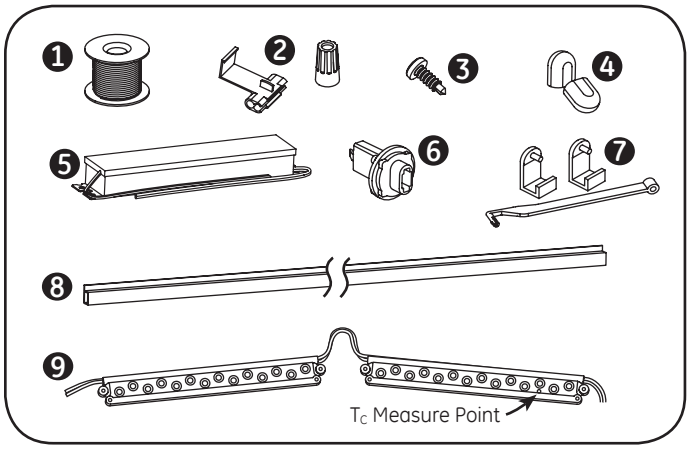
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This Class [A] RFLD complies with the Canadian standard ICES-003. Ce DEFR de la classe [A] est conforme à la NMB-003 du Canada.

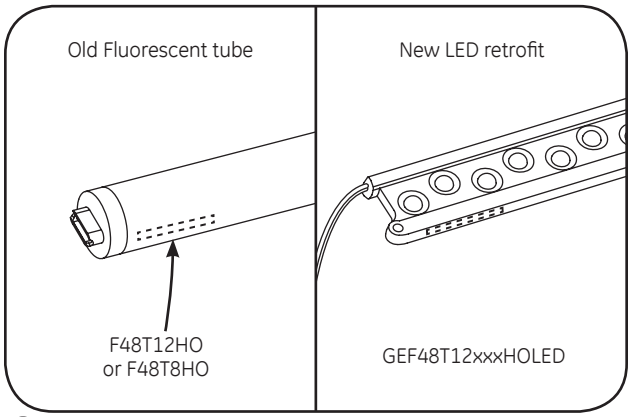
imagination at work

Components



1. UL certified 18 AWG (0.82 mm²) supply wire
2. UL certified 22-14 AWG (0.33-2.08 mm²) wire connectors or 18-14 AWG (0.82-2.08 mm²) inline/IDC connectors
3. #6 x .75 inch (M3 x 19mm) self-tapping screws
4. Wiring end caps
5. Tetra® 24VDC power supply
6. Line Fit Light end cap (GEDSREC1)
7. Tetra® extender mounting clip and extender rod (GEDSARC1)
8. Tetra® 8 ft. mounting rail (GEDSRL08)
9. Line Fit Light-LED modules

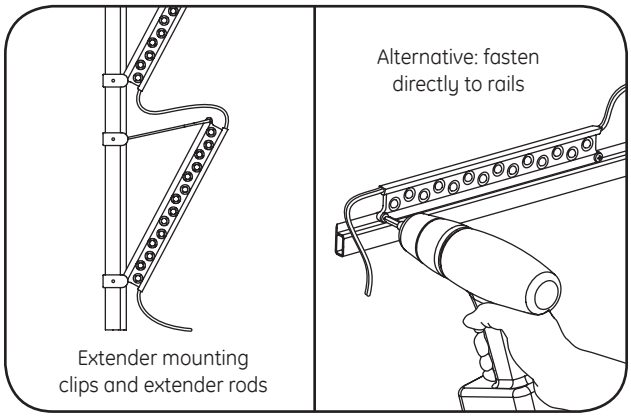
Installation



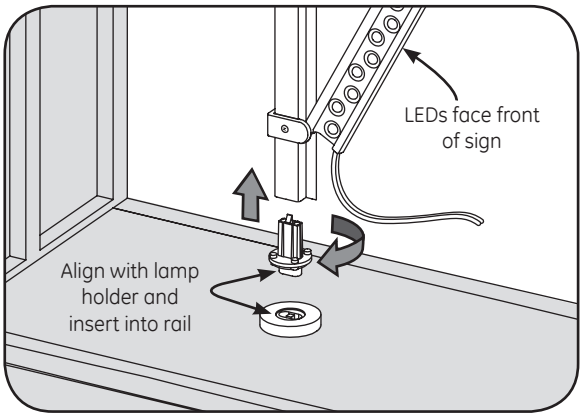
1. Read the product labels of the old fluorescent tubes to determine Line Fit Light length required to span height of sign based on table at right. Measure and cut Tetra® mounting rail or other suitable mounting means to appropriate length to fit into sign.

Rail Length Requirements

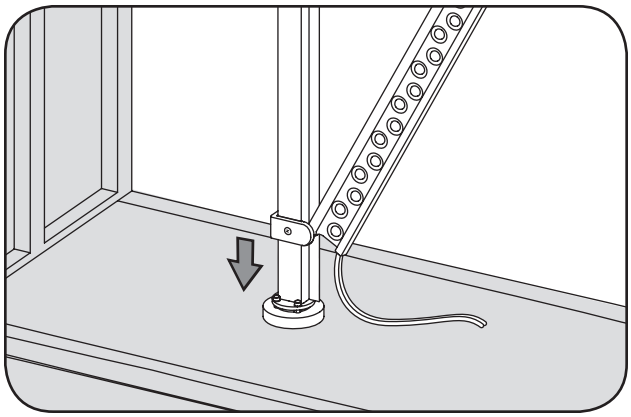
SKU	Module Length	Cut Rail Length
GEF24T12xxxHOLED	2 ft.	20.79" (528.1mm)
GEF36T12xxxHOLED	3 ft.	32.79" (832.9mm)
GEF48T12xxxHOLED	4 ft.	44.79" (1137.7mm)
GEF60T12xxxHOLED	5 ft.	56.79" (1442.5mm)
GEF72T12xxxHOLED	6 ft.	68.79" (1747.3mm)
GEF84T12xxxHOLED	7 ft.	80.79" (2052.1mm)
GEF96T12xxxHOLED	8 ft.	92.79" (2356.9mm)
GEF18T12xxxHOLED	1.5 ft.	14.82" (376.5mm)
GEF30T12xxxHOLED	2.5 ft.	26.81" (681.1mm)
GEF42T12xxxHOLED	3.5 ft.	38.81" (985.8mm)
GEF64T12xxxHOLED	5.33 ft.	60.81" (1544.5mm)



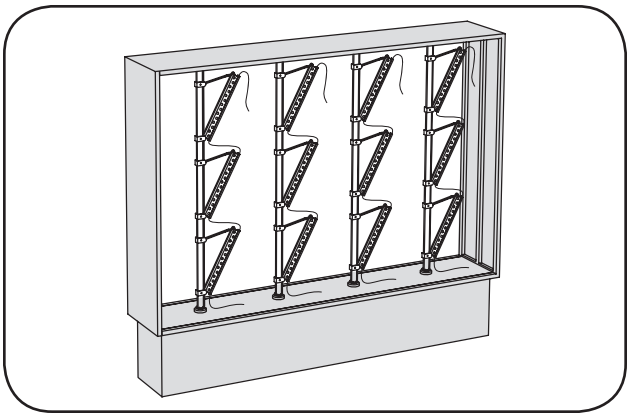
2. Secure the Line Fit Light modules to the mounting rail using the extender mounting clips and extender rods. Alternatively, secure modules into lip with a self-tapping #6 (M3) screw or 1/8-inch (3.175mm) rivet.



3. Orient Line Fit Light modules so LEDs are facing front of sign, then rotate and insert the two endcap fittings so they align with existing fluorescent lamp holders.

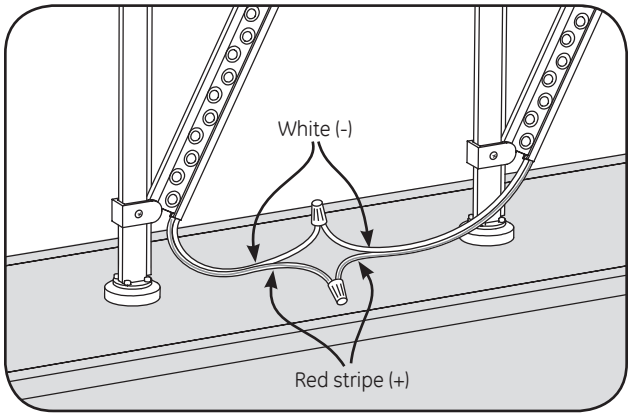


4 Push both ends of the mounting rail into existing fluorescent lamp holders.



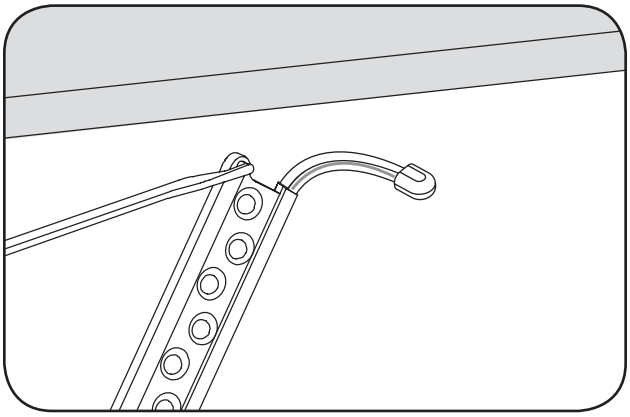
5 Continue installing Line Fit Light modules.

Electrical Connections

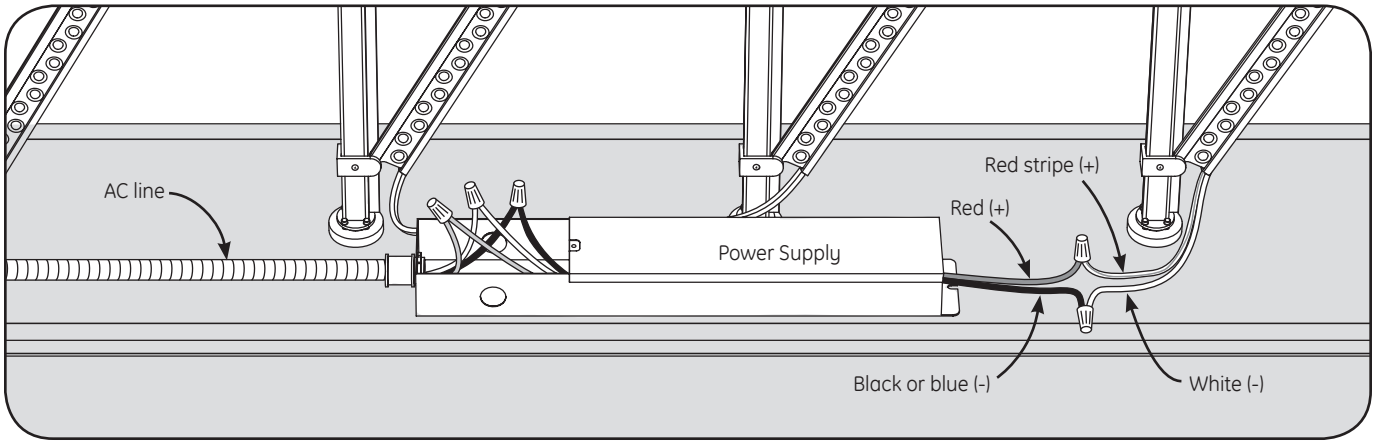


1 Connect modules together using twist-on wire connectors or in-line (IDC) connectors. Join white wires together and red striped wires together.

NOTE: Additional supply wire may be necessary to bridge electrical connections.



2 Cap all exposed wires with appropriate end caps or apply electric grade (non-corrosive) silicone for additional weather protection.



3 Wire AC line to LED driver(s) in accordance with the applicable local, state, and country electrical codes. Connect black to black or brown, white to white or blue, and green to green using 18 AWG (0.82mm^2) wire connectors. Reattach wire cover to power supply.

4 Connect the red stripe wire (+) from the first module to the red wire (+) of the power supply. Connect the white wire (-) from the first module to the black or blue wire (-) of the power supply.

Retrofit Instructions

1. ***(Existing Signs Only)*** Prior to installation, survey the site for information regarding power and accessibility inside and outside the building. Ensure that the branch circuit supplying the existing transformer or ballast will be within the voltage ratings of the new LED power supply, and have a current rating not exceeding 20A, or that permitted by applicable local, state, or country electrical codes (whichever is less).
2. ***(Existing Signs Only)*** Remove the existing lighting equipment to be replaced, such as neon tubing or fluorescent tubes; and associated transformers and ballasts. Care should be taken not to break the existing neon or fluorescent tubes.

   NOTE: Follow all federal and local regulations when disposing of neon tubing, fluorescent tubes, transformers and ballasts.
3. ***(Existing Signs Only)*** If removal of the existing lighting equipment eliminates the disconnect switch, as required by applicable local, state, or country electrical codes; a new disconnect switch must be installed.
4. ***(Existing Signs Only)*** Make sure the removal of lighting equipment does not compromise the integrity of the sign body (i.e. water intrusion). Fill in all holes 0.5 in. (13 mm) or smaller with the appropriate amount of rated caulk or sealant. For holes greater than 0.5 in. (13 mm), use an aluminum or zinc coated steel patch with rivets and sealant.
5. Using the layout guidelines above, determine required number of LED modules required to illuminate the sign.
6. A Tetra® 24VDC Class 2 Power Supply, as listed below, must be used with this retrofit kit. Using the Maximum Loading chart below, determine the number of Tetra® Class 2 Power Supplies required to power the number of LED modules required to illuminate the sign, so as not to overload the Tetra® Class 2 Power Supply chosen.
7. Follow the instructions above to properly mount the LED modules.
8. Connect the DC output of the power supply to the LED modules using the Electrical Connections instructions above.
9. Connect the power unit to the supply in accordance with the applicable local, state, and country electrical codes, and the instructions found in the power supply installation guide.
10. If required, the disconnect switch shall be installed by qualified personnel, in accordance with applicable local, state, and country electrical codes.

Troubleshooting

Symptom	Solution
Row of modules does not light	• Check wire connections to power supply to ensure red stripe-to-red and white-to-black or blue connections. • Check row-to-row polarity connections.
Sign does not light	• Check input and output voltage and check power supply input/output connections. • Check polarity connections.
Individual modules do not light	• Remove module and replace with another working module.
Modules are dim	• Ensure the overall length of the Tetra® LED system does not exceed the maximum load. • Ensure the length and gauge of the supply wire is equal to or below the recommended remote mounting distance.

Specifications

Maximum Loading per Tetra® 24 VDC Class 2 Power Supply

SKU	Rating	20W Power Supply ***Note:*** *Load shall not exceed 0.83A*	80W Dimming Power Supply ***Note:*** *Load shall not exceed 3.3A*	100W Power Supply ***Note:*** *Load shall not exceed 4.0A*	180W Power Supply ***Note:*** *Load shall not exceed 3.8A per each (of 2) output channels*
GEF12T12DHOLED, GEF12T12CWHOLED, GEF12T12SGNHOLED	24VDC 240mA/module 5.8W/module	3 modules/ 4.4 ft. (1.33m)	12 modules/ 17.4 ft. (5.30m)	16 modules/ 23.2 ft. (7.07m)	14 modules/20.3 ft. (6.19m) per output channel 28 modules/40.6 ft. (12.38m) per power supply

Maximum Remote Mounting Distance

	18 AWG/0.82 mm² Supply Wire	16 AWG/1.31 mm² Supply Wire	14 AWG/2.08 mm² Supply Wire	12 AWG/3.31 mm² Supply Wire
20W Power Supply	120 ft./36.6m	–	–	–
80W Power Supply	20 ft./6.1m	25 ft./7.6m	35 ft./10.6m	40 ft./12.1m
100W Power Supply	20 ft./6.1m	25 ft./7.6m	35 ft./10.6m	40 ft./12.1m
180W Power Supply	20 ft./6.1m	25 ft./7.6m	35 ft./10.6m	40 ft./12.1m

This product is intended solely for the use of non-residential signage lighting and is not intended for use in any other applications.
Conforms to the following standards:

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